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ABSTRACT

The technology revolution is causing changes in faculty roles and debates over the implications for institutions. This Critical Issue Bibliography (CRIB) Sheet describes resources related to educational technology in the higher education classroom, highlighting changing faculty role, implementation within different disciplines, and faculty training and development. The resources are grouped into: (1) Internet resources; (2) "Getting Started"; (3) "Faculty Role"; (4) "Disciplinary Issues"; and (5) "Development/Training." The annotated bibliography lists 1 Internet resource and 30 print resources, all of which are in the ERIC database. (SLD)

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Critical Issue Bibliography (CRIB) Sheet:

Technology in the Classroom

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A Critical Issue Bibliography (CRIB) sheet is a selected bibliography on a topic of interest in the field of higher education. The majority of the literature cited in the bibliography is found in the ERIC Database, though some CRIB sheets also include other literature, such as selected Internet resources. CRIB sheets are updated annually.

Many of the issues discussed in one bibligraphy relate to another CRIB sheet topic. For example, the CRIB sheet on affirmative action is closely related to the CRIB sheet on creating a multicultural climate on campus. We have tried to note such connections in the bibliographies themselves; we encourage you not to see CRIB sheet topics as discrete and to explore several bibliographies on related topics.

This CRIB sheet was updated in December 2001.

Critical Issue Bibliography (CRIB) Sheet:
Technology in the College Classroom

Although many faculty still teach using traditional methods, an increasing number are realizing the potential of multimedia, the Internet, and other technology-based forms of instruction. Using technology in the classroom is beneficial because it:

- Emphasizes active learning;
- Responds to different learning styles;
- Enhances collaborative learning;
- Increases individualized learning and self-paced study; and
- Encourages greater student independence.

However, there is a significant barrier to implementing technology in the classroom: faculty ownership of the curriculum. In order to affordably integrate technology into the classroom, multiple campus sharing of resources is necessary. However, with curriculum planning occurring primarily at the individual faculty level, technology often costs institutions an inordinate amount of money. In this bibliography, we highlight some of the key issues related to technology implementation in the classroom:

- Changing faculty role;
- Implementation within different disciplines; and
- Faculty training and development.

The technology revolution is causing changes in faculty roles and debates over the implications for institutions. In order to utilize new technical tools, there has been a great deal of experimentation in various disciplines to align new pedagogies with specific types of instruction. As new technologies emerge, training is critical for faculty without a technology background, and all faculty must be provided opportunities to continue their skill development.

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Internet Resources

http://www.horizon.unc.edu/projects/TS/
The Technology Source (formerly The Technology Colloquium), a free publication,

is a forum for college and university faculty members and administrators to share their experiences integrating technology on their campuses and into their curricula. Every issue of The Technology Source features discussions, case studies, relevant research, articles, surveys and solutions for integrating technology into academic organizations.

Getting Started

EJ622925
Carlson, P. A. (2001). Information technology and organizational change. *Journal of Technical Writing and Communication, 31* , 1, 77-95.
Examines three sought-after Instructional Technology Outcomes (increased productivity, managed change, and enhanced human abilities) concluding that much of IT falls short through impoverished implementation planning and blind faith in technology to solve problems. Discusses four areas of opportunity.

ED451817
Phipps, R. A., & Wellman, J. V. (2001). Funding the "Infostructure": A guide to financing technology infrastructure in higher education. *New Agenda Series, 3*, 2.
This report is based on a survey of state financial officers and interviews with experts and institutional representatives on the financing of technology in higher education. Officials saw technology as a key issue for their schools' success, whether it is used for distance education, enhancing student services, or supporting the work of administrators and researchers. Based on the report's findings, the authors make recommendations that can help campus officials and state and federal policy makers develop funding policies for information technology. The report also offers a new lexicon for the components of technology infrastructure to create the necessary common language for communicating about technology. (Contains 21 references.)

ED431358
Schweizer, H. (1999). *Designing and teaching an on-line course: Spinning your web classroom.* Needham Heights, MA: Allyn & Bacon.
This guide to developing and teaching an on-line course is intended to lead the instructor through the steps of course development, on-line teaching, and on-line assessment.

ED432164
Keating, A. B., & Hargitai, J. (1999). *The wired professor: a guide to incorporating the World Wide Web in college instruction.* New York: New York University Press.
This book is a guide for college faculty with limited Internet experience.

EJ582070
Herron, T. L. (1998). Teaching with the internet. *The Internet and Higher Education, 1,* 217-22.
This journal looks at the ways the Internet can be used as a pedagogical tool in higher education. Provides illustrations and examples of the ways faculty can incorporate Internet technology into classes.

Faculty Role

EJ561340
Atamian, Rubik, & DeMoville, Wig. (1998, Winter). Office hours- none: An e-mail experiment. *College Teaching, 46,* 1, 31-35.
This article looks at an experiment done by two faculty members in which all communication with students, outside of the classroom, was through e-mail and other forms of data transmission.

EJ518367
Massy, William F., & Zemsky, Robert. (1996, January/February). Information technology and academic productivity. *Educom Review, 31,* 1, 12-14.
Enumerates the challenges of adopting information technology (IT)-based teaching and learning strategies in higher education. Concerns addressed include whether IT should supplant rather than augment traditional teaching methods, the financing of IT acquisition, the evolution of teaching and learning processes to increase productivity per person, and the reduction of employee numbers.

EJ547647
Deden, Ann, & Carter, Vicki K. (1996, Winter). Using technology to enhance students' skills. *New Directions for Higher Education, 24,* 4, 81-92.
Looks at the forces driving colleges and universities to incorporate technology in higher education.

ED390381
Byron, Suzanne. (1995, December 1). *Computing and other instructional technologies: Faculty perceptions of current practices and views of future challenges.* A Focus Group Study Conducted for the Information Resources Council and the Office of the Provost.
Based on a focus group study at the University of North Texas. Comments suggest that faculty believe the use of technology can add value to the total educational experience, but they would recommend that the University: (1) foster development of discipline-specific models; (2) provide time to redesign courses using technology when appropriate; and (3) ensure availability and reliability of equipment and support. A list of the questions posed to the focus groups is appended.

EJ512138
Guardo, Carol J., & Rivinius, Scott. (1995, Summer). Save before closing: Bringing technology to the liberal arts. *Liberal Education, 81,* 3, 22-27.
A consortium of 12 four-year, private liberal arts colleges has sought to address the promises and challenges of information technology for undergraduate education. The effort has involved identification of faculty using technology in teaching, then of their individual strategies and techniques, and the establishment of a home page on the World Wide Web for continued communication on this topic.

EJ518478
Dodge, Bernie. (1995, Summer). WebQuests: A technique for Internet-based learning.

Distance Educator, 1, 2, 10-13.
WebQuest, developed at San Diego State University. WebQuest is an inquiry-oriented activity in which learners interact with resources on the Internet. Outlines attributes that need to be incorporated in all WebQuest designs; includes examples of WebQuest exercises and Internet addresses for related documents.

Disciplinary Issues

EJ565348
Cardenas, Karen. (1998, May/June). Technology in today's classroom: It slices and it dices, but does it serve us well? *Academe, 84,* 3, 27-29.
This article looks at the issues of instruction, equipment failure, quality, and superficiality in technology-based learning.

EJ565347
Scott, M.M. (1998, May/June). Intellectual property rights: A ticking time bomb in academia. *Academe, 84,* 3, 22-26.
This article looks at the issue of intellectual property rights as it concerns college and university faculty during the technology age. It examines the concerns and the steps being taken to insure academic freedom.

EJ554125
Burk, Dan L. (1997, Fall). Ownership of electronic course materials in higher education. *Cause/Effect, 20,* 3, 13-18.
The article discusses the allocation of copyright ownership of electronic course materials between faculty members and the sponsoring institution. It reviews copyright basics, the work-made-for-hire doctrine, and options for contractual allocations of copyrights.

EJ508998
Swift, Mary L., & Zielinski, Theresa Julia. (1995, June). What chemists (or chemistry students) need to know about computing. *Journal of Science Education and Technology, 4,* 2, 171-79.
Presents key points of an on-line conference discussion and integrates them with information from the literature. Key points include: computer as a tool for learning, study, research, and communication; hardware, software, computing concepts, and other teaching concerns; and the appropriate place for chemistry computer-usage instruction.

ED387090
Anderson, Stephen T., Sr. (1995). *Multimedia in the classroom -- Rejuvenating the literacy course.*
The use of multimedia tools, such as ASTOUND, is summarized. Perceived benefits and costs associated with their utilization are outlined.

EJ485655
Abowitz, Deborah A. (1994, January). Developing awareness and use of library resources in undergraduate sociology: A sample assignment. *Teaching Sociology, 22,* 1, 58-64.

Asserts that one of the increasingly critical skills that undergraduates must master is electronic information retrieval. Maintains that sociologists can readily integrate library instruction into undergraduate courses and help develop student awareness of and ability to use the ever-growing body of library resources and information.

EJ463663
Merickel, Alan P. (1993, May). Some thoughts about computers and composition: How did I get here and where am I headed? *Teaching English in the Two-Year College, 20,* 2, 128-31.
Describes computer conferencing as a particularly useful alternative to traditional approaches to teaching college composition. Outlines how an instructor might utilize computer networks to set up a composition course.

Development/Training

ED434602
Liu, Y., & Thompson, D. (1999). *Teaching the same course via distance and traditional education: A case study.*
This case study was designed to investigate the effect on an instructor simultaneously teaching the same course in both a distance and a traditional format. The paper goes on to discuss the results of the study.

EJ591526
Wolfe, C. R., Crider, L., Mayer, L., McBride, M., Sherman, R., & Vogel, R. (1998). Toward a Miami University model for internet-intensive higher education. *Journal on Excellence in College Teaching, 9,* 1, 29-51.
This article describes principles underlying an emerging model for internet-intensive undergraduate instruction at Miami University (Ohio) in which students learn by creating online materials themselves, faculty facilitate active learning, student intellectual exchanges are enriched, and the seminar sensibility is extended.

ED432161
Lyons, R. E., Kysilka, M. L., & Pawlas, G. E. (1999). *The adjunct professor's guide to sucess. Surviving and thriving in the college classroom.* Needham Heights, MA: Allyn and Bacon.
This guide provides adjunct faculty with a conceptual foundation for college teaching and a collection of teaching and classroom management ideas to help meet the needs of their students.

ED428631
Stage, Frances K., Terrell, M., & Watson, Lemuel W. (Eds.) (1999). *Enhancing student learning: Setting the campus context.* Alexandria, VA: American College Personnel Association.
This book offers eight papers intended for student affairs professionals, college faculty, and educators of student affairs professionals, focusing on the entire campus learning environment and which discusses wholistic approaches to college learning.

ED429470
Borsa, J., Klotz, J., & Uzat, R. (1998, Nov). *Utilizing distance learning and the case study method to enhance instruction between two universities.* Paper presented at the Annual Meeting of the Mid-South Educational Research Association, New Orleans, LA.
This paper describes an alternative instructional concept- a distance learning/cohort teaching/cohort student grouping that used the Internet to deliver instruction.

EJ586183
Gibbs, W. J. (1998, Fall). Implementing on-line learning environments. *Journal of Computing in Higher Education, 10,* 1, 16-37.
This article describes an on-line college course and student perceptions of the virtual classroom experience.

EJ573728
Massy, William F., & Wilger, Andrea K. (1998, Fall). Technology's contribution to higher education productivity. *New Directions for Higher Education, 26,* 3, 49-59.
This article looks at how technology can contribute to increased learning productivity by offering economies of scale and mass customization, enabling faculty to accommodate individual differences and students to progress at their own pace.

EJ554128
Smith, Karen L. (1997, Fall). Preparing faculty for instructional technology: From education to development to creative independence. *Cause/Effect, 20,* 3, 36-44,48.
This article examines the theoretical and methodological tools that can help college faculty design flexible learning environments that incorporate new technologies to meet individual needs and course or curriculum goals.

EJ539398
Stahlke, Herbert F. W., & Nyce, James M. (1996, Winter). Reengineering higher education: Reinventing teaching and learning. *Cause/Effect, 19,* 4, 44-51.
Reviews significant literature on the reengineering of teaching and learning in higher education, focusing on the application of an asynchronous model of teaching and learning. Develops a framework for the use of various tools or modes of learning, from textbooks and lectures to electronic mail, news groups, and the World Wide Web.

EJ539397
Bothun, G. D. (1996, Winter). Teaching via electrons: Networked courseware at the University of Oregon. *Cause/Effect, 19,* 4, 37-43.
Discusses the development of campus networking and networked courseware at the University of Oregon, focusing on the possibilities and limitations of interactive courseware. Preliminary evaluations indicate that Internet-based courseware seems to better engage motivated students and allows for the development of a dynamic core-course curriculum, though instructor preparation time continues to be a serious drawback.

EJ521833
Gonzalez, Josue M. (1995). An Internet gopher to support graduate education and

professional development for school administrators. *Journal of Technology and Teacher Education, 3,* 4, 323-42.
Describes the design and installation of an Internet gopher server to support classroom instruction and professional development projects in a graduate college of education. Topics include use by administrators, selecting the most appropriate technology, hardware and software selection, and informational resources of the gopher.

EJ475655
Carbone, Nick. (1993, November). Trying to create a community: A first-day lesson plan. *Computers and Composition, 10,* 4, 81-83.
Outlines a first-day lesson plan for a first-year writing class in which the instructor engages students at the outset in building an electronic online community. Provides step-by-step methods and discusses specific advice for what to do and not to do within the context of achieving an online emphasis.

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